# AGENDA ITEM 4.
# COLLABORATIVE SCIENCE UPDATES

**Panelists:**

Cliff Dahm, Delta Lead Scientist

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David Mooney, US Bureau of Reclamation

# TOPICS:

High-Impact Science Actions

Draft Science Action Agenda

Science Enterprise Workshop

Integrated Ecosystem Modeling

Structured Decision-Making Proposal (USBR)

# Status of High-Impact Science Actions

1) **Endorsed by DPIIC in 2015.** Significant progress on each topic. Successful completion of 2015-2017 Sea Grant, and 2015-2016 Prop 1 Solicitation research topics.

2) **Drought Effects Synthesis.** Implementation underway.

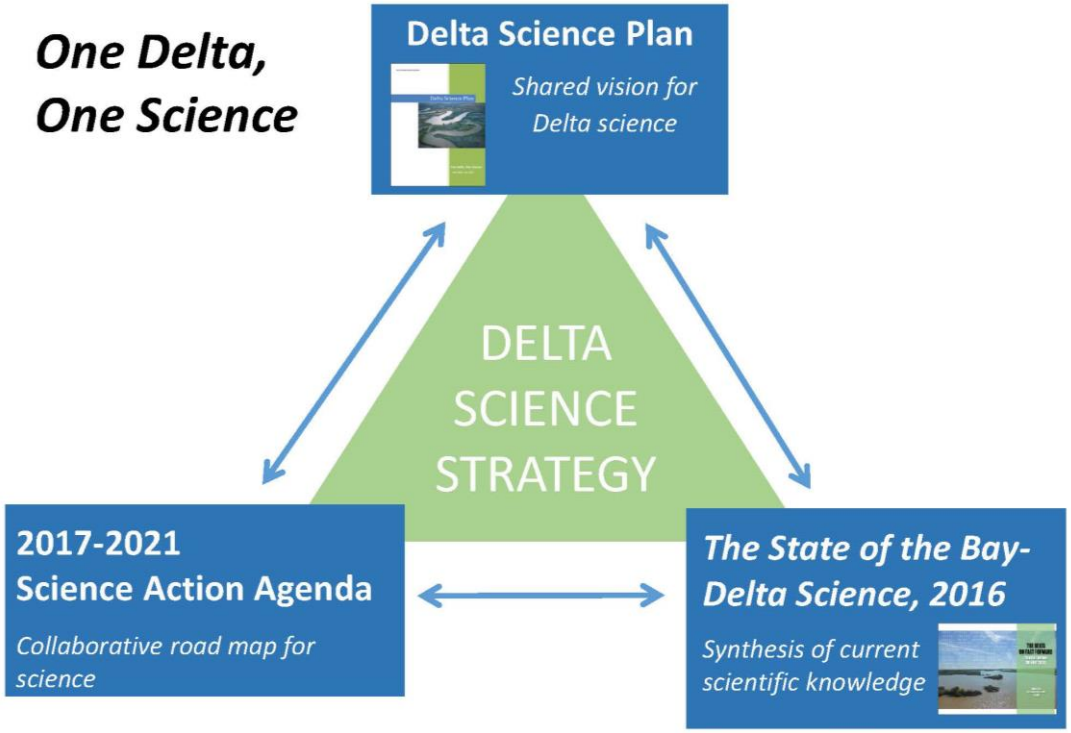
| | Topic | Status: Awaiting (additional) Workgroup input | Initiated/ Initial discussions in place | Being scoped by interested entities | Implementation underway |
|---|---|---|---|---|---|
| Table 1: High-Impact Science Actions That May Be Addressed By Rapid-Response Implementation | | | | | |
| 1A | ***Drought effects synthesis*** *Conduct a technical review of current reports concerning the drought to identify what is known about effects of the drought as well as to determine gaps in knowledge and topics not covered in past synthesis efforts. Using results from the review conduct a "lessons learned" workshop and create a set of metrics to monitor key indicators of drought impacts.* | | | ○ | ★ |
| 1B | ***Real-time decision support tool evaluation*** *Evaluate tools supporting real-time operations, monitoring, reporting, data management, and accessibility of data.* | | | ○ | ○ |
| 2C | ***Restoration design synthesis*** *Synthesize established knowledge about designing effective habitat restoration projects in the Delta.* | | | ○ | ○ |
| 2D | ***Pre-restoration monitoring*** *Enhance current and promote additional monitoring efforts in the Delta and Suisun Marsh to gather pre-restoration data.* | | | ○ | |
| 2E | ***Northeast Delta landscape vision*** *Develop the landscape vision and decision support framework for the Northeast Delta pilot effort.* | | | ● | |
| 3F | ***Shasta Reservoir temperature forecasting*** *Conduct follow-up work to improve collaborative temperature modeling of cold water forecasting for Shasta Reservoir releases into the Sacramento River.* | | | | ● |
| 3G | ***Salmon life-cycle model review*** *Peer-review of the Southwest Fisheries Science Center's winter-run Chinook salmon life-cycle model.* | Completed | | | |
| 3H | ***Resources and mechanisms to fund collaborative research*** *Identify the process, mechanisms and resources to fund research identified by various efforts such as Salmon/Steelhead/Sturgeon Assessment of Indicators by Life Stages (SAIL), the Interagency Ecological Program's Management, Analysis, and Synthesis Team (MAST), the Collaborative Adaptive Management Team (CAMT), and Delta Regional Monitoring Program (Delta RMP).* | | | | ● |
| 4I | ***Economic analysis of flood control methods*** *Consolidate the current state of knowledge regarding economic analysis of the potential to reduce flood damage through strategic levee setbacks and expanding wetland and floodplain acreage.* | | ○ | | |
| Table 2: Longer Term Implementation Mechanisms - Proposal Solicitation/Delta Science Fellows | | | | | |
| | 2015 Sea Grant Delta Science Fellows Request for Applications | - COMPLETED - | | | |
| | 2016 Sea Grant Delta Science Fellows Request for Applications | - COMPLETED - | | | |
| ★ | 2016 Research topics for Proposition 1 proposal solicitations | - COMPLETED - | | | |
| | 2017 Sea Grant Delta Science Fellows Request for Applications | - COMPLETED - | | | |
| | Multi-agency proposal solicitation | | ○ | | |

○ – early stages of implementation ● – well underway

# 2017-2021 Draft Science Action Agenda (SAA)

1) **Identifies top research priorities and science infrastructure needs for Delta**

2) **Draft SAA Available for Public Review**
   - Substantial public and agency comments have helped shape the SAA, including two meetings with Delta Agency Science Workgroup
   - Delta Independent Science Board review
   - Public comment period ends May 10



# Science Enterprise Workshop DPIIC MEETING #6 OUTCOMES:

1) **Science Enterprise Workshop Outcomes Report and Recommendations Adoption**
   - Adopted recommendations from Science Enterprise Workshop as guiding principles
   - Proceedings Report now available
   - Additional Recommendations Report forthcoming
2) **Develop Proposal for Integrated Modeling with Interagency Input:**

**The Science Enterprise Workshop:**
**Supporting and Implementing Collaborative Science**

Proceedings Report

The Science Enterprise Workshop was held on November 1-2, 2016, at UC Davis and brought together scientists and science-policy experts from across the country to share information about how collaborative science is funded, managed, and communicated in several high-profile and complex ecosystems: the California Bay-Delta; the Chesapeake Bay and Watershed; Coastal Louisiana; the Great Lakes; the Greater Everglades Ecosystem; and Puget Sound.

The Proceedings Report, now available online, combines information found in the Science Enterprise Workshop Advance Briefing Paper, including an overview of each system, with abridged transcripts of the presentations, panel discussions, and audience questions and answers. It's organized according to the workshop agenda and integrates slides and graphics used during the program.

The contents of Proceedings Report, including individual sections, can be viewed online at (https://mavensnotebook.com/science-enterprise-workshop/) and videos from the workshop can be viewed online at (www.deltacouncil.ca.gov/youtube-page).

*Co-hosted by U.S. Geological Survey and the Delta Stewardship Council*

USGS science for a changing world

Delta Stewardship Council

# Guiding Principles on Components of Effective Science Enterprises

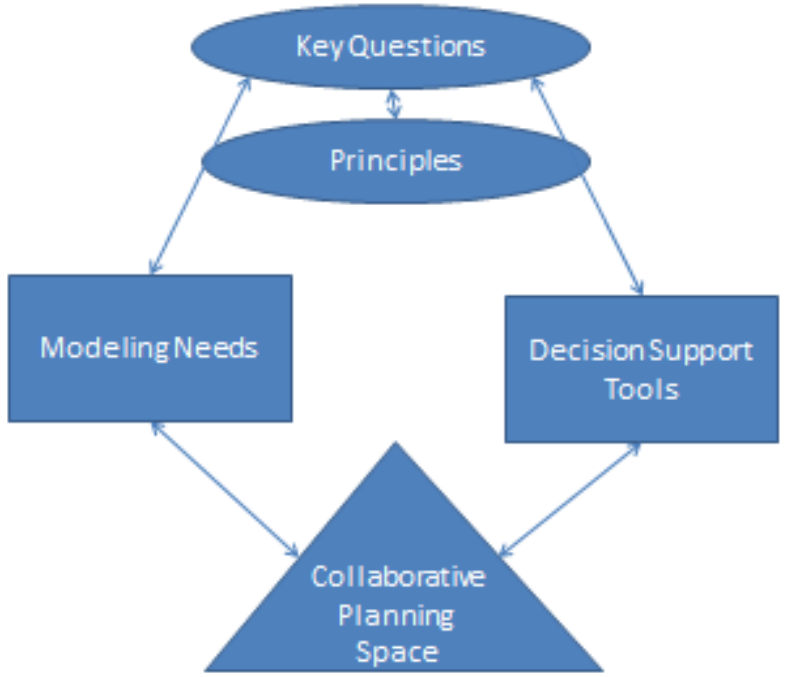
1. Integrated modeling and forecasting
2. Peer-review, or over-the-shoulder review process
3. Clear communication on importance of scientific findings
4. Integration of social sciences
5. Willingness to do adaptive management
6. Competitive science funding to attract best and brightest
7. Clear leadership and decision making structure with responsibility at the highest level

# Status of Integrated Ecosystem Modeling in the Delta

1) **Significant work has been done to understand and further the state of art on integrated ecosystem modeling in the Bay-Delta**

2) **Agencies and experts are developing and working on models that further link biological, chemical, geological, and physical processes**

3) **Advancement in integrated ecosystem modeling is not limited by technical challenges – it will be driven by the ability to collaboratively identify key management questions**




Close collaboration between agencies, science managers, and directors is needed to identify modeling needs (like gaps in data) and continue to improve understanding of how management actions affect the ecosystem (with the aid of decision support tools).

# Structured Decision-Making Pilot Proposal by USBR

David Mooney, USBR

# Structured Decision Making (SDM) Pilot

- Reclamation and the Delta Science Program seek participants from DPIIC and stakeholders for a **Project Management Team (PMT)** to pilot a focused effort on a subset of Reclamation's resource decisions for the Delta.
- SDM is a collection of practices to inform decision-making while considering scientific, social, and economic uncertainties.
- The PMT would scope the pilot effort based on lessons learned under other science enterprises.
- **Next steps include:**
  - November DPIIC Meeting – Update on the scope; and
  - 1-2 years – Results and a recommendation on whether to conclude, modify, or expand this pilot effort.
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